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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EDWARD LANGER				
c/o SHIBOLETH YISRAELI ROBERTS ZISMAN & CO.				
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EXAMINER				
COX, ALEXIS K				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/527,791

Applicant(s)

RIVLIN, EITAN

Examiner

ALEXIS K. COX

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 11, 21, and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Claim Objections

1. Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The sole content of claim 11 is that the flow divider is selected from a group of fixed orifices, adjustable orifices, and vane wheels disposed on a common axis. As the combination of fixed and adjustable orifices includes every possible flow divider within a valve, this claim fails to further limit the subject matter of claim 1.
2. Claim 21 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The sole content of claim 21 indicates that the sensing of a temperature difference uses a thermally responsive device. As it is not possible to sense temperature without a thermally responsive device, this fails to further limit claim 18.
3. Claim 22 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. As the step of altering the

preselected temperature takes place before the step of sensing the preselected temperature, it has no real effect, and therefore fails to further limit claim 18.

Specification

4. The disclosure is objected to because of the following informalities:

On page 5, the second line of the summary of the invention, the phrase "Devoid of a mechanical link," should be changed to --The absence of a mechanical link--

Also on page 5, line 8 of the same paragraph, the phrase "to provide a mixing valve, which" should be changed to --to provide a mixing valve which--

On page 6, the sentence spanning lines 14-22 should be replaced with

--Additionally, the mixing regulation assembly also comprises at least one flow controlling mechanism for increasing the flow of one of the component streams and decreasing the flow of the other component stream in concert, so as to induce a pressure differential between the two component streams; at least one thermally responsive element arranged to be in fluid flow and in heat transfer communication with at least one of the component streams and operative to control the at least one flow controlling mechanism in response to a difference between the temperature of the component streams and the preselected temperature; and also a recombination and discharge means for recombining the component streams into a mixed fluid stream for output from the fluid mixing valve via the first fluid outlet.--

On page 8, line, 20, the phrase "responsive elements" should be changed to --responsive element--, and the sentence spanning lines 23-24 should be replaced with

--According to a variation of an embodiment of the present invention, the bimetal element is configured as one of the elements selected from the group of: disc, coil and rod.--

On page 12, the sentence beginning on line 8 should be replaced with the following:

--The present invention seeks to provide a solution to the problem of providing a constant, stable temperature from separate supplies of hot and cold water or other fluids in various environments, including but not limited to industry, hospitals, sports clubs, hotels, and homes, including end point uses such as basins and showers.--

On page 13, line 15, the phrase "hot and cold water streams, entering" should be changed to --hot and cold water streams entering--

Also on page 13, on lines 24-25, the phrase "through flow divider 11 such as restrictors, and" should be replaced with --through flow divider 11, and--

On page 14, line 19, the phrase "Restrictors flow divider 11" should be changed to --Flow divider 11--

On page 15, line 28, the phrase "diaphragms 71" should be changed to --diaphragm 71--

On page 16, line 2, the phrase "valve seat 91" should be --valve seats 91--

On page 16, line 14, the phrase "Figures 6 and Figure 7" should be changed to --Figure 6, and Figure 7,--

On page 16, line 18, the phrase "Apertures 34 and 43, and" should be changed to --Apertures 34 and 43 and--

On page 16, line 21, the phrase "chambers 45 and 97" should be changed to -- chambers 95 and 97-- in accordance with the figures

On page 16, line 30, the phrase "new equilibrium conditions obtain," should be changed to --new equilibrium conditions are obtained.--

On page 23, line 9, the phrase "resulting in a rapid, and" should be changed to -- resulting in a rapid and--

On page 26, the paragraph starting on line 11 should be replaced with:

--Due to the decrease in water volume of the spool assembly, water temperature is measured by the bimetal disk a very short time after passing the hot and cold water inlet valves. Bimetal response to any change in mixed water temperature is faster than the mechanical oscillation cycle time related to that flow condition, and feedback phase delay tending to cause excessive response (overshoot) is shorter and effectively prevented in spaces 295, 297 (Figure 11), as the water trapped in these spaces is able to escape only through dumping holes 243.--

Page 26, line 18, the phrase "Also heat transfer" should be replaced with --Also, heat transfer--

Page 26, line 24, the phrase "spring disks 238,239," should be replaced with -- spring disks 238, 239,--

On page 26, the paragraph on lines 26-29 should be replaced with the following:

--Referring now to figures 22 and 23 in conjunction with figure 21, there is seen a cross-sectional view (Figure 22) taken along line 10-10 of an end view (Figure 23) of a

mixing valve 660. Spool assembly 620 (as disclosed hereinabove in relation to figure 21) is disposed within housing 661 and housing closure 663.--

Page 27, line 2, the phrase "certain preselected" should be changed to --a certain preselected--

On page 27, line 15, the phrase "this will not effect" should be changed to --this will not affect--

On page 27, line 26, the phrase "Both describing a mixing valve" should be changed to --Both describe a mixing valve--

On page 27, line 29, the phrase "Figures 12,13." should be changed to --Figures 12, 13.--

On page 28, the sentence starting on line 1 should be replaced with the following:

--Here vane wheels 501 and 503, disposed on a common shaft axis 502, and hence rotating at the same speed, force the same volumetric output through both sides of the central diaphragm 171.--

On page 28, line 5, the phrase "housing 561, is closed" should be changed to --housing 561 is closed--

On page 28, the paragraph beginning on line 7 should be replaced with the following:

--In this embodiment of the present invention, vane wheels 501 and 503 comprise the flow divider replacing orifices 189 and 190 described in conjunction with Figure 12, and the fixed equal restrictor type flow divider 11 in the method of Figure 2.

Replacing the fixed restrictor type flow divider 11 with an active vane flow divider greatly increases the margin of flow rate while temperature accuracy is strictly maintained. It should be noted that the volume of fluid filling the chamber defined by the vane wheels 501 and 503 serves, even in the absence of the vane wheel itself, as a regulating chamber, averaging the temperature of the water volume captured inside. A circular flow path such as is defined in Figure 25 has good temperature averaging capability, even without the vane itself. A greater volume of fluid and therefore better regulation is easily accommodated simply by use of a larger capacity chamber.--

Appropriate correction is required.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reid (US Patent No. 6,820,816), Arnaud (US Patent No. 6,811,713), Knapp (US Patent No. 6,708,895), Noyes (US Patent No. 6,679,476), Palmer (US Patent No. 6,405,932), Kolze (US Patent No. 6,290,139), Bergeron (US Patent No. 6,234,670), Fenn et al (US Patent No. 5,503,183), Simonov et al (US Patent No. 5,427,312), Shiba et al (US Patent No. 5,033,671), Kidouchi et al (US Patent No. 4,909,435), Humpert (US Patent No. 4,349,149), Sasai (US Patent No. 4,166,575), Stedman, Jr. et al (US Patent No. 3,980,229), Vasle (US Patent No. 3,581,759), and Taplin (US Patent No. 3,561,483) all disclose relevant valves.
6. This application is in condition for allowance except for the following formal matters:

The claim and specification objections disclosed above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXIS K. COX whose telephone number is (571)270-5530. The examiner can normally be reached on Monday through Thursday 9:00a.m. to 6:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules or Cheryl Tyler can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AKC/

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/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744